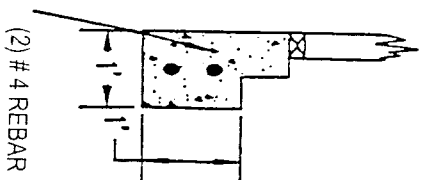
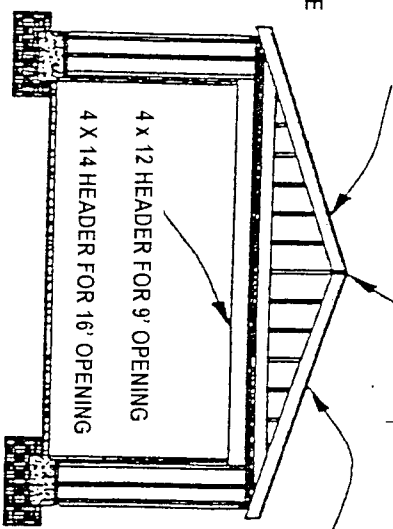


FOUNDATION PLAN

PT SILL WITH 1/2" ANCHOR BOLT W/ 3" X 3" X .229 PLATE WASHER @ 6' AND 1' MAX FROM ENDS



1/2" CDX SHEATHING OR EQUIVALENT W/ BLKG OR CLIPS W 8d NAILS 6" EDGES 12" IN FIELD



FRONT ELEVATION

EARTH

RAFTERS PER TABLE WITH SIMPSON H1 @ EACH END IF USING TRUSSES, CALCS SHALL BE ON SITE

ANY DEVIATION FROM THIS PLAN REQUIRES 3 SETS OF PLANS WITH PLAN CHECK FEES

SECTION A A DETAIL

REFER TO SECTION R602.10.1.4.1

SECTION B B DETAIL

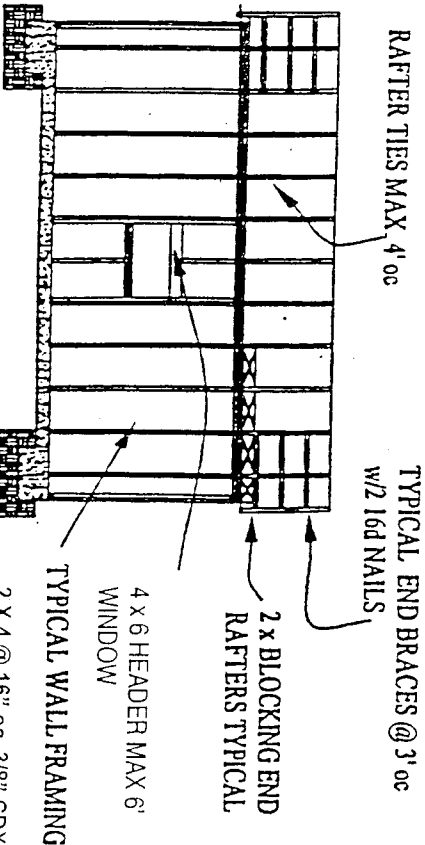
BRACED WALL PANELS SHALL START NOT MORE THAN 12 1/2' FROM THE END OF A BRACED WALL LINE IN ACCORDANCE WITH SECTION R602.10.1.

RAFTER SIZE	ROOF LOAD	RAFTER SPACING	MAXIMUM SPAN
2X6	20	16"	14'1"
2X6	30	16"	11'11"
2X6	20	24"	11'9"
2X6	30	24"	9'9"
2X8	20	16"	18'2"
2X8	30	16"	15'1"
2X8	20	24"	14'10"
2X8	30	24"	12'4"

RAFTER SCHEDULE

FIRE SEVERITY ZONES

Materials used for doors, siding and windows must comply with Title 24, Part 5, California Residential Code, Section R327. Materials for roofs must comply with Section R327.5. Materials for siding must comply with Section R327.7. Vents must comply with Section R327.6. Exterior doors and windows must comply with Section R327.8



SIDE ELEVATION

2 X 4 @ 16" oc. 3/8" CDX Or 5/8" T-111 w/ 8d nails 6" edges 12" in field

4 x 6 HEADER MAX 6' WINDOW

2 x BLOCKING END RAFTERS TYPICAL

RAFTER TIES MAX. 4' oc

TYPICAL END BRACES @ 3' oc w/ 2 16d NAILS

GARAGE INFORMATION

§ 1426. Accessory Buildings or Structures and Building Components Installed in Fire Hazard Severity Zones.

- (a) Accessory buildings or structures or building components constructed or installed in parks in a State Responsibility Area Fire Hazard Severity Zone or a local Very-High Fire Hazard Severity Zone, as indicated on the California Department of Forestry and Fire Protection's Fire Hazard Severity Zone Maps, shall comply with Title 24, Part 2.5, Chapter 3, section R327 of the California Residential Code (CRC) which is hereby incorporated by reference with the exception of the following provisions: Sections R327.1.5, R327.2 (Fire Protection Plan) and R327.3.6.
- (b) Accessory buildings or structures or building components constructed or installed outside of parks in a State Responsibility Area Fire Hazard Severity Zone, a local Very-High Fire Hazard Severity Zone, or a local Wildland-Urban Interface Fire Area shall comply with the provisions of the CRC, Title 24, Part 2.5, Chapter 3, section R327.

NOTE: Authority cited: Sections 18300 and 18691, Health and Safety Code. Reference: Section 18691.

§ 1428. Location.

- (a) In parks, accessory buildings or structures, or any part thereof, on a lot shall maintain the following setbacks from lot lines:
 - (1) When constructed of noncombustible materials:
 - (A) may be up to the lot line, provided a minimum three (3) foot clearance is maintained from any other unit, accessory building or structure, or building component on adjacent lots.
 - (2) When constructed of combustible materials:
 - (A) a minimum three (3)-foot clearance from all lot lines, and
 - (B) a minimum six (6)-foot clearance from any other unit, accessory buildings or structures, or building components on adjacent lots constructed of combustible materials.
- (b) Cabanas shall meet the location requirements for units, as referenced in section 1330 of this chapter.
- (c) Location requirements governing private garages and storage buildings are contained in section 1443.
- (d) Stairways with landings not to exceed twelve (12) square feet may be installed to the lot line provided they are located a minimum of three (3) feet from any unit, or accessory building or structure, including another stairway, on an adjacent lot. However, if the stairway is an up-and-over design (steps up the front and down the back) that provides access to the lot beyond the stairway, it does not need to maintain the separation from a unit or accessory building or structure, including another stairway, on an adjacent lot.
- (e) Fencing of any material, that meets the requirements of section 1514 of this article, may be installed up to a lot line.

- (f) No portion of an accessory building or structure, or building component shall project over or beyond a lot line.
- (g) Any accessory building or structure, or building component may be installed up to a lot line bordering a roadway or common area provided there is no combustible building or structure in the common area within six (6) feet and no building or structure of any kind within three (3) feet of any portion of the accessory building or structure, or building component. The maximum seventy-five percent (75%) lot coverage allowed by section 1110 of this chapter shall be maintained.
- (h) Wood awning or carport support posts four (4) inches or greater in nominal thickness may be located up to a lot line provided the remainder of the awning or carport is composed of noncombustible material.

NOTE: Authority cited: Sections 18300, and 18610, Health and Safety Code. Reference: Sections 18552 and 18610, Health and Safety Code.

§ 1432. Construction.

- (a) Construction and installation of accessory buildings or structures or building components shall comply with the structural requirements of the California Residential Code, except as otherwise provided by this article. The enforcement agency may require accessory buildings and structures or building components be designed and constructed to withstand live loads, vertical uplift or horizontal forces from any direction in excess of the minimum loads specified in this chapter, based on local geologic, topographic, or climatic conditions, when approved by the department.
- (b) Accessory buildings and structures constructed of aluminum or aluminum alloy shall be designed to conform to the specifications contained in the California Residential Code.
- (c) Unless data to substantiate the use of higher values is submitted to the enforcement agency, the allowable loading of accessory buildings or structures or building components on the soil shall not exceed one thousand five-hundred (1,500) psf vertical soil bearing pressure, one hundred fifty (150) psf of depth lateral soil bearing pressure, and one hundred sixty-seven (167) psf frictional resistance for uncased cast-in-place concrete piles.

NOTE: Authority cited: Section 18300, Health as Safety Code. Reference: Sections 18552 and 18620, Health and Safety Code.

§ 1443. Private Garages and Storage Buildings.

- (a) A private garage or storage building may be located immediately adjacent to a unit if the garage or storage building wall adjacent to the unit is constructed of materials approved for one (1) hour fire-resistant construction. If there are openings which are not one (1)-hour fire-rated in the unit wall adjacent to the garage or storage building wall, a minimum of three (3) feet of separation shall be maintained. A minimum of six (6) feet of separation shall be maintained between the unit and a private garage or storage building which does not meet the requirements for one (1) hour fire-resistant construction.

- (b) A three (3)-foot separation shall be maintained from a private garage or storage building and any lot line which does not border on a roadway.
- (c) Garages shall be designed and constructed as freestanding structures. They shall not be attached to or supported by an MH-unit; however, to provide a weather seal, flashing or sealing materials may be affixed between the garage and the MH-unit.

NOTE: Authority cited: Section 18300, Health and Safety Code. Reference: Sections 18552 and 18610, Health and Safety Code.

TABLE R602.3(1)
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{a, b, c}	SPACING OF FASTENERS
Roof			
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2½" × 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2½" × 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie rafter, face nail or 1¼" × 20 gage ridge strap	3-10d (3" × 0.128")	—
5	Rafter to plate, toe nail	2-16d (3½" × 0.135")	—
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (3½" × 0.135") 3-16d (3½" × 0.135")	— —
Wall			
7	Built-up corner studs	10d (3" × 0.128")	24" o.c.
8	Built-up header, two pieces with ½" spacer	16d (3½" × 0.135")	16" o.c. along each edge
9	Continued header, two pieces	16d (3½" × 0.135")	16" o.c. along each edge
10	Continuous header to stud, toe nail	4-8d (2½" × 0.113")	—
11	Double studs, face nail	10d (3" × 0.128")	24" o.c.
12	Double top plates, face nail	10d (3" × 0.128")	24" o.c.
13	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (3½" × 0.135")	—
14	Sole plate to joist or blocking, face nail	16d (3½" × 0.135")	16" o.c.
15	Sole plate to joist or blocking at braced wall panels	3-16d (3½" × 0.135")	16" o.c.
16	Stud to sole plate, toe nail	3-8d (2½" × 0.113") or 2-16d (3½" × 0.135")	— —
17	Top or sole plate to stud, end nail	2-16d (3½" × 0.135")	—
18	Top plates, laps at corners and intersections, face nail	2-10d (3" × 0.128")	—
19	1" brace to each stud and plate, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
20	1" × 6" sheathing to each bearing, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
21	1" × 8" sheathing to each bearing, face nail	2-8d (2½" × 0.113") 3 staples 1¾"	— —
22	Wider than 1" × 8" sheathing to each bearing, face nail	3-8d (2½" × 0.113") 4 staples 1¾"	— —
Floor			
23	Joist to sill or girder, toe nail	3-8d (2½" × 0.113")	—
24	1" × 6" subfloor or less to each joist, face nail	2-8d (2½" × 0.113") 2 staples 1¾"	— —
25	2" subfloor to joist or girder, blind and face nail	2-16d (3½" × 0.135")	—
26	Rim joist to top plate, toe nail (roof applications also)	8d (2½" × 0.113")	6" o.c.
27	2" planks (plank & beam – floor & roof)	2-16d (3½" × 0.135")	at each bearing
28	Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
29	Ledger strip supporting joists or rafters	3-16d (3½" × 0.135")	At each joist or rafter

(continued)

WALL CONSTRUCTION

TABLE R602.3(1)—continued
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER ^{b, c, e}	SPACING OF FASTENERS	
			Edges (inches) ⁱ	Intermediate supports ^{c, e} (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing				
30	$\frac{3}{8}$ " - $\frac{1}{2}$ "	6d common (2" × 0.113") nail (subfloor wall) ^j 8d common (2½" × 0.131") nail (roof)	6	12 ^f
31	$\frac{5}{16}$ " - $\frac{1}{2}$ "	6d common (2" × 0.113") nail (subfloor, wall) 8d common (2½" × 0.131") nail (roof) ^f	6	12 ^f
32	$\frac{19}{32}$ " - 1"	8d common nail (2½" × 0.131")	6	12 ^f
33	1½" - 1¼"	10d common (3" × 0.148") nail or 8d (2½" × 0.131") deformed nail	6	12
Other wall sheathing ^h				
34	½" structural cellulosic fiberboard sheathing	½" galvanized roofing nail, ⅞" crown or 1" crown staple 16 ga., 1¼" long	3	6
35	$\frac{25}{32}$ " structural cellulosic fiberboard sheathing	1¾" galvanized roofing nail, ⅞" crown or 1" crown staple 16 ga., 1½" long	3	6
36	½" gypsum sheathing ^d	1½" galvanized roofing nail; staple galvanized, 1½" long; 1¼" screws, Type W or S	7	7
37	$\frac{5}{8}$ " gypsum sheathing ^d	1¾" galvanized roofing nail; staple galvanized, 1⅝" long; 1⅝" screws, Type W or S	7	7
Wood structural panels, combination subfloor underlayment to framing				
38	$\frac{3}{4}$ " and less	6d deformed (2" × 0.120") nail or 8d common (2½" × 0.131") nail	6	12
39	$\frac{7}{8}$ " - 1"	8d common (2½" × 0.131") nail or 8d deformed (2½" × 0.120") nail	6	12
40	1½" - 1¼"	10d common (3" × 0.148") nail or 8d deformed (2½" × 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1ksi = 6.895 MPa.

- All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
- Staples are 16 gage wire and have a minimum $\frac{7}{16}$ -inch on diameter crown width.
- Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
- Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.
- Spacing of fasteners not included in this table shall be based on Table R602.3(2).
- For regions having basic wind speed of 110 mph or greater, 8d deformed ($2\frac{1}{2}" \times 0.120"$) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.
- For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.
- Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
- Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

TABLE R602.3(2)
ALTERNATE ATTACHMENTS

NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION ^{a,b} OF FASTENER AND LENGTH (inches)	SPACING ^c OF FASTENERS	
		Edges (inches)	Intermediate supports (inches)
Wood structural panels subfloor, roof and wall sheathing to framing and particleboard wall sheathing to framing ^f			
up to 1/2	Staple 15 ga. 1 3/4	4	8
	0.097 - 0.099 Nail 2 1/4	3	6
	Staple 16 ga. 1 3/4	3	6
19/32 and 5/8	0.113 Nail 2	3	6
	Staple 15 and 16 ga. 2	4	8
	0.097 - 0.099 Nail 2 1/4	4	8
23/32 and 3/4	Staple 14 ga. 2	4	8
	Staple 15 ga. 1 3/4	3	6
	0.097 - 0.099 Nail 2 1/4	4	8
	Staple 16 ga. 2	4	8
1	Staple 14 ga. 2 1/4	4	8
	0.113 Nail 2 1/4	3	6
	Staple 15 ga. 2 1/4	4	8
	0.097 - 0.099 Nail 2 1/2	4	8
NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION ^{a,b} OF FASTENER AND LENGTH (inches)	SPACING ^c OF FASTENERS	
		Edges (inches)	Body of panel ^d (inches)
Floor underlayment; plywood-hardboard-particleboard ^f			
Plywood			
1/4 and 5/16	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	3	6
	Staple 18 ga., 7/8, 3/16 crown width	2	5
11/32, 3/8, 15/32, and 1/2	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8 ^e
19/32, 5/8, 23/32 and 3/4	1 1/2 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8
	Staple 16 ga. 1 1/2	6	8
Hardboard ^f			
0.200	1 1/2 long ring-grooved underlayment nail	6	6
	4d cement-coated sinker nail	6	6
	Staple 18 ga., 7/8 long (plastic coated)	3	6
Particleboard			
1/4	4d ring-grooved underlayment nail	3	6
	Staple 18 ga., 7/8 long, 3/16 crown	3	6
3/8	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 1/8 long, 3/8 crown	3	6
1/2, 5/8	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 5/8 long, 3/8 crown	3	6

For SI: 1 inch = 25.4 mm.

a. Nail is a general description and may be T-head, modified round head or round head.

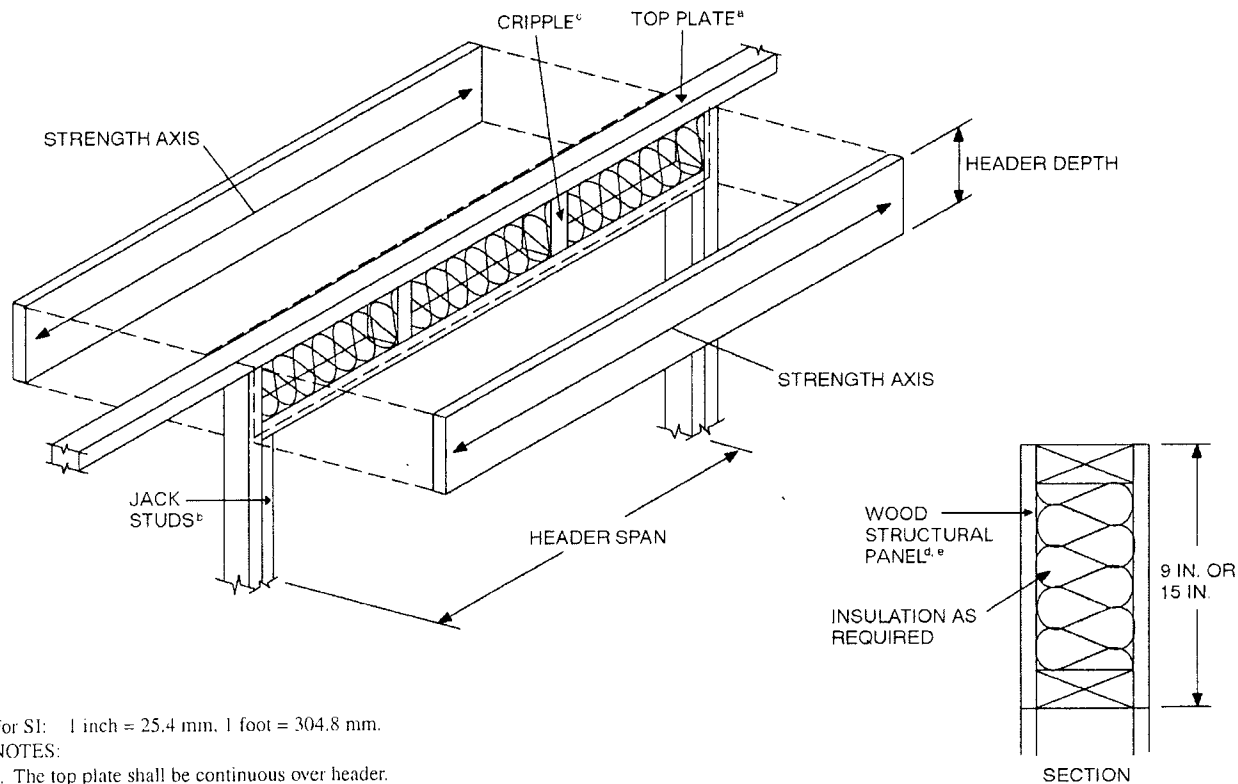
b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted.

c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.

d. Fasteners shall be placed in a grid pattern throughout the body of the panel.

e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.

f. Hardboard underlayment shall conform to ANSI/AHA A135.4.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

NOTES:

- The top plate shall be continuous over header.
- Jack studs shall be used for spans over 4 feet.
- Cripple spacing shall be the same as for studs.
- Wood structural panel faces shall be single pieces of $\frac{15}{32}$ -inch-thick Exposure 1 (exterior glue) or thicker, installed on the interior or exterior or both sides of the header.
- Wood structural panel faces shall be nailed to framing and cripples with 8d common or galvanized box nails spaced 3 inches on center, staggering alternate nails $\frac{1}{2}$ inch. Galvanized nails shall be hot-dipped or tumbled.

FIGURE R602.7.2
TYPICAL WOOD STRUCTURAL PANEL BOX HEADER CONSTRUCTION

R602.8 Fireblocking required. Fireblocking shall be provided in accordance with Section R302.11.

R602.9 Cripple walls. Foundation cripple walls shall be framed of studs not smaller than the studding above. When exceeding 4 feet (1219 mm) in height, such walls shall be framed of studs having the size required for an additional story.

Cripple walls with a stud height less than 14 inches (356 mm) shall be sheathed on at least one side with a wood structural panel that is fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations.

R602.10 Wall bracing. Buildings shall be braced in accordance with this section. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.

Exception: Detached one- and two-family dwellings located in Seismic Design Category C are exempt from the seismic bracing requirements of this section. Wind speed provisions

for bracing shall be applicable to detached one- and two-family dwellings.

R602.10.1 Braced wall lines. *Braced wall lines* shall be provided in accordance with this section. The length of a *braced wall line* shall be measured as the distance between the ends of the wall line. The end of a *braced wall line* shall be considered to be either:

- The intersection with perpendicular exterior walls or projection thereof,
- The intersection with perpendicular *braced wall lines*.

The end of the *braced wall line* shall be chosen such that the maximum length results.

R602.10.1.1 Braced wall panels. *Braced wall panels* shall be constructed in accordance with the intermittent bracing methods specified in Section R602.10.2, or the continuous sheathing methods specified in Sections R602.10.4 and R602.10.5. Mixing of bracing method shall be permitted as follows:

- Mixing bracing methods from *story to story* is permitted.

2. Mixing bracing methods from *braced wall line* to *braced wall line* within a *story* is permitted, except that continuous sheathing methods shall conform to the additional requirements of Sections R602.10.4 and R602.10.5.
3. Mixing bracing methods within a *braced wall line* is permitted only in Seismic Design Categories A and B, and detached *dwellings* in Seismic Design Category C. The length of required bracing for the *braced wall line* with mixed sheathing types shall have the higher bracing length requirement, in accordance with Tables R602.10.1.2(1) and R602.10.1.2(2), of all types of bracing used.

R602.10.1.2 Length of bracing. The length of bracing along each *braced wall line* shall be the greater of that required by the design wind speed and *braced wall line* spacing in accordance with Table R602.10.1.2(1) as adjusted by the factors in the footnotes or the Seismic Design Category and *braced wall line* length in accordance with Table R602.10.1.2(2) as adjusted by the factors in Table R602.10.1.2(3) or *braced wall panel* location requirements of Section R602.10.1.4. Only walls that are parallel to the *braced wall line* shall be counted toward the bracing requirement of that line, except angled walls shall be counted in accordance with Section R602.10.1.3. In no case shall the minimum total length of bracing in a *braced wall line*, after all adjustments have been taken, be less than 48 inches (1219 mm) total.

R602.10.1.2.1 Braced wall panel uplift load path.

Braced wall panels located at exterior walls that support roof rafters or trusses (including stories below top *story*) shall have the framing members connected in accordance with one of the following:

1. Fastening in accordance with Table R602.3(1) where:
 - 1.1. The basic wind speed does not exceed 90 mph (40 m/s), the wind exposure category is B, the roof pitch is 5:12 or greater, and the roof span is 32 feet (9754 mm) or less, or
 - 1.2. The net uplift value at the top of a wall does not exceed 100 plf. The net uplift value shall be determined in accordance with Section R802.11 and shall be permitted to be reduced by 60 plf (86 N/mm) for each full wall above.
2. Where the net uplift value at the top of a wall exceeds 100 plf (146 N/mm), installing *approved* uplift framing connectors to provide a continuous load path from the top of the wall to the foundation. The net uplift value shall be as determined in Item 1.2 above.
3. Bracing and fasteners designed in accordance with accepted engineering practice to resist combined uplift and shear forces.

R602.10.1.3 Angled corners. At corners, *braced wall lines* shall be permitted to angle out of plane up to 45

degrees with a maximum diagonal length of 8 feet (2438 mm). When determining the length of bracing required, the length of each *braced wall line* shall be determined as shown in Figure R602.10.1.3. The placement of bracing for the *braced wall lines* shall begin at the point where the *braced wall line*, which contains the angled wall adjoins the adjacent *braced wall line* (Point A as shown in Figure R602.10.1.3). Where an angled corner is constructed at an angle equal to 45 degrees (0.79 rad) and the diagonal length is no more than 8 feet (2438 mm), the angled wall may be considered as part of either of the adjoining *braced wall lines*, but not both. Where the diagonal length is greater than 8 feet (2438 mm), it shall be considered its own *braced wall line* and be braced in accordance with Section R602.10.1 and methods in Section R602.10.2.

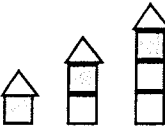


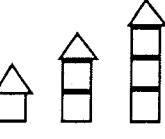
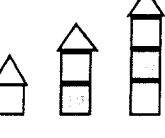
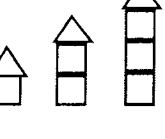
R602.10.1.4 Braced wall panel location. *Braced wall panels* shall be located in accordance with Figure R602.10.1.4(1). *Braced wall panels* shall be located not more than 25 feet (7620 mm) on center and shall be permitted to begin no more than 12.5 feet (3810 mm) from the end of a *braced wall line* in accordance with Section R602.10.1 and Figure R602.10.1.4(2). The total combined distance from each end of a *braced wall line* to the outermost *braced wall panel* or panels in the line shall not exceed 12.5 feet (3810 mm). *Braced wall panels* may be offset out-of-plane up to 4 feet (1219 mm) from the designated *braced wall line* provided that the total out-to-out offset of *braced wall panels* in a *braced wall line* is not more than 8 feet (2438 mm) in accordance with Figures R602.10.1.4(3) and R602.10.1.4(4). All *braced wall panels* within a *braced wall line* shall be permitted to be offset from the designated *braced wall line*.

R602.10.1.4.1 Braced wall panel location in Seismic Design Categories D₀, D₁ and D₂. *Braced wall lines* at exterior walls shall have a *braced wall panel* located at each end of the *braced wall line*.

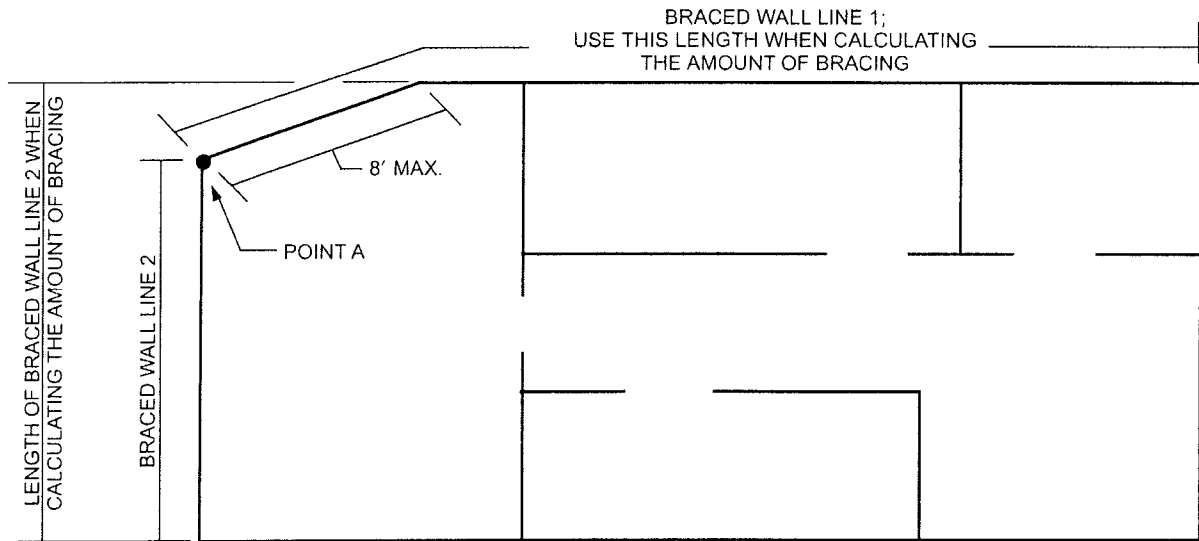
Exception: For *braced wall panel* construction Method WSP of Section R602.10.2, the *braced wall panel* shall be permitted to begin no more than 8 feet (2438 mm) from each end of the *braced wall line* provided one of the following is satisfied in accordance with Figure R602.10.1.4.1:

1. A minimum 24-inch-wide (610 mm) panel is applied to each side of the building corner and the two 24-inch-wide (610 mm) panels at the corner are attached to framing in accordance with Figure R602.10.4.4(1), or
2. The end of each *braced wall panel* closest to the corner shall have a hold-down device fastened to the stud at the edge of the *braced wall panel* closest to the corner and to the foundation or framing below. The hold-down device shall be capable of providing an uplift allowable design value of at least 1,800 pounds (8 kN). The hold-down device shall be installed in accordance with the manufacturer's recommendations.

TABLE R602.10.1.2(1)^{a, b, c, d, e}
BRACING REQUIREMENTS BASED ON WIND SPEED
(as a function of braced wall line spacing)

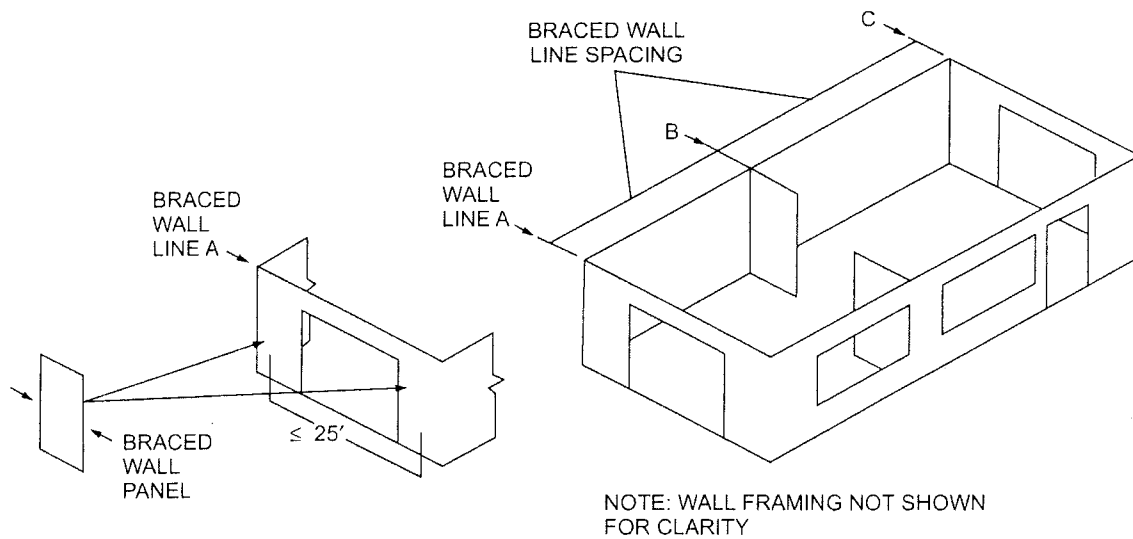
EXPOSURE CATEGORY B, 30 FT MEAN ROOF HEIGHT, 10 FT EAVE TO RIDGE HEIGHT, 10 FT WALL HEIGHT, 2 BRACED WALL LINES			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE			
Basic Wind Speed (mph)	Story Location	Braced Wall Line Spacing (feet)	Method LIB ^{f, h}	Method GB (double sided) ^g	Methods DWB, WSP, SFB, PCP, HPS ^{f, i}	Continuous Sheathing
≤ 85 (mph)		10	3.5	3.5	2.0	1.5
		20	6.0	6.0	3.5	3.0
		30	8.5	8.5	5.0	4.5
		40	11.5	11.5	6.5	5.5
		50	14.0	14.0	8.0	7.0
		60	16.5	16.5	9.5	8.0
		10	6.5	6.5	3.5	3.0
		20	11.5	11.5	6.5	5.5
		30	16.5	16.5	9.5	8.0
		40	21.5	21.5	12.5	10.5
		50	26.5	26.5	15.0	13.0
		60	31.5	31.5	18.0	15.5
		10	NP	9.0	5.5	4.5
		20	NP	17.0	10.0	8.5
		30	NP	24.5	14.0	12.0
		40	NP	32.0	18.0	15.5
		50	NP	39.0	22.5	19.0
		60	NP	46.5	26.5	22.5
≤ 90 (mph)		10	3.5	3.5	2.0	2.0
		20	7.0	7.0	4.0	3.5
		30	9.5	9.5	5.5	5.0
		40	12.5	12.5	7.5	6.0
		50	15.5	15.5	9.0	7.5
		60	18.5	18.5	10.5	9.0
		10	7.0	7.0	4.0	3.5
		20	13.0	13.0	7.5	6.5
		30	18.5	18.5	10.5	9.0
		40	24.0	24.0	14.0	12.0
		50	29.5	29.5	17.0	14.5
		60	35.0	35.0	20.0	17.0
		10	NP	10.5	6.0	5.0
		20	NP	19.0	11.0	9.5
		30	NP	27.5	15.5	13.5
		40	NP	35.5	20.5	17.5
		50	NP	44.0	25.0	21.5
		60	NP	52.0	30.0	25.5

(continued)



For SI: 1 foot = 304.8 mm.

FIGURE R602.10.1.3
ANGLED CORNERS



For SI: 1 foot = 304.8 mm.

FIGURE R602.10.1.4(1)
BRACED WALL PANELS AND BRACED WALL LINES

R602.10.1.5 Braced wall line spacing for Seismic Design Categories D₀, D₁ and D₂. Spacing between *braced wall lines* in each *story* shall not exceed 25 feet (7620 mm) on center in both the longitudinal and transverse directions.

Exception: In one- and two-story buildings, spacing between two adjacent *braced wall lines* shall not exceed 35 feet (10 668 mm) on center in order to accommodate one single room not exceeding 900 square feet (84 m²) in each *dwelling unit*. Spacing between all other *braced wall lines* shall not exceed 25 feet (7620 mm). A spacing of 35 feet (10 668 mm) or less shall be permitted between *braced wall lines* where the length of wall bracing required by Table R602.10.1.2(2) is multiplied by the appropriate adjustment factor from Table R602.10.1.5, the length-to-width ratio for the floor/roof *diaphragm* does not exceed 3:1, and the top plate lap splice face nailing is twelve 16d nails on each side of the splice.

R602.10.2 Intermittent braced wall panel construction methods. The construction of intermittent *braced wall panels* shall be in accordance with one of the methods listed in Table R602.10.2.

R602.10.2.1 Intermittent braced wall panel interior finish material. Intermittent *braced wall panels* shall have gypsum wall board installed on the side of the wall opposite the bracing material. Gypsum wall board shall be not less than 1/2 inch (12.7 mm) in thickness and be fastened in accordance with Table R702.3.5 for interior gypsum wall board.

Exceptions:

1. Wall panels that are braced in accordance with Methods GB, ABW, PFG and PFH.
2. When an *approved* interior finish material with an in-plane shear resistance equivalent to gypsum board is installed.
3. For Methods DWB, WSP, SFB, PBS, PCP and HPS, omitting gypsum wall board is permitted provided the length of bracing in Tables R602.10.1.2(1) and R602.10.1.2(2) is multiplied by a factor of 1.5.

R602.10.2.2 Adhesive attachment of sheathing in Seismic Design Categories C, D₀, D₁ and D₂. Adhesive attachment of wall sheathing shall not be permitted in Seismic Design Categories C, D₀, D₁ and D₂.

R602.10.3 Minimum length of braced panels. For Methods DWB, WSP, SFB, PBS, PCP and HPS, each *braced wall panel* shall be at least 48 inches (1219 mm) in length, covering a minimum of three stud spaces where studs are spaced 16 inches (406 mm) on center and covering a minimum of two stud spaces where studs are spaced 24 inches (610 mm) on center. For Method GB, each *braced wall panel* shall be at least 96 inches (2438 mm) in length where applied to one

face of a *braced wall panel* and at least 48 inches (1219 mm) where applied to both faces. For Methods DWB, WSP, SFB, PBS, PCP and HPS, for purposes of computing the length of panel bracing required in Tables R602.10.1.2(1) and R602.10.1.2(2), the effective length of the *braced wall panel* shall be equal to the actual length of the panel. When Method GB panels are applied to only one face of a *braced wall panel*, bracing lengths required in Tables R602.10.1.2(1) and R602.10.1.2(2) for Method GB shall be doubled.

Exceptions:

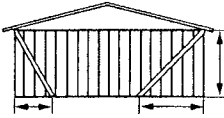
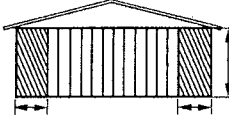
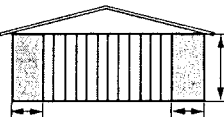
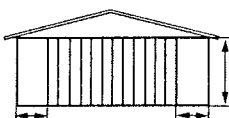
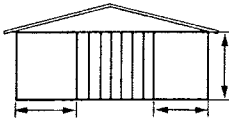
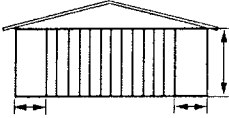
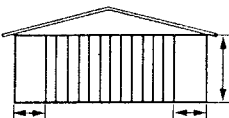
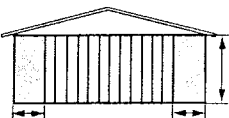
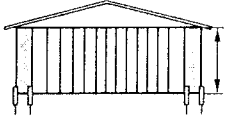
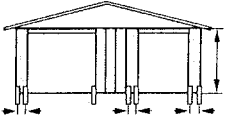
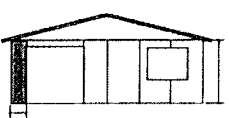
1. Lengths of *braced wall panels* for continuous sheathing methods shall be in accordance with Table R602.10.4.2.
2. Lengths of Method ABW panels shall be in accordance with Sections R602.10.3.2.
3. Length of Methods PFH and PFG panels shall be in accordance with Section R602.10.3.3 and R602.10.3.4 respectively.
4. For Methods DWB, WSP, SFB, PBS, PCP and HPS in Seismic Design Categories A, B, and C: Panels between 36 inches (914 mm) and 48 inches (1219 mm) in length shall be permitted to count towards the required length of bracing in Tables R602.10.1.2(1) and R602.10.1.2(2), and the effective contribution shall comply with Table R602.10.3.

R602.10.3.1 Adjustment of length of braced panels. When *story height* (H), measured in feet, exceeds 10 feet (3048 mm), in accordance with Section R301.3, the minimum length of *braced wall panels* specified in Section R602.10.3 shall be increased by a factor H/10. See Table R602.10.3.1. Interpolation is permitted.

R602.10.3.2 Method ABW: Alternate braced wall panels. Method ABW *braced wall panels* constructed in accordance with one of the following provisions shall be permitted to replace each 4 feet (1219 mm) of *braced wall panel* as required by Section R602.10.3. The maximum height and minimum length and hold-down force of each panel shall be in accordance with Table R602.10.3.2:

1. In one-story buildings, each panel shall be installed in accordance with Figure R602.10.3.2. The hold-down device shall be installed in accordance with the manufacturer's recommendations. The panels shall be supported directly on a foundation or on floor framing supported directly on a foundation which is continuous across the entire length of the *braced wall line*.
2. In the first *story* of two-story buildings, each *braced wall panel* shall be in accordance with Item 1 above, except that the wood structural panel sheathing edge nailing spacing shall not exceed 4 inches (102 mm) on center.

TABLE R602.10.2
INTERMITTENT BRACING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
LIB	Lct-in-bracing	1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d nails per stud including top and bottom plate metal: per manufacturer
DWB	Diagonal wood boards	$\frac{3}{4}$ " (1" nominal) for maximum 24" stud spacing		2-8d ($2\frac{1}{2}$ " × 0.113") nails or 2 staples, $1\frac{3}{4}$ " per stud
WSP	Wood structural panel (see Section R604)	$\frac{3}{8}$ "		For exterior sheathing see Table R602.3(3) For interior sheathing see Table R602.3(1)
SFB	Structural fiberboard sheathing	$\frac{1}{2}$ " or $\frac{25}{32}$ " for maximum 16" stud spacing		$1\frac{1}{2}$ " galvanized roofing nails or 8d common ($2\frac{1}{2}$ " × 0.131) nails at 3" spacing (panel edges) at 6" spacing (intermediate supports)
GB	Gypsum board	$\frac{1}{2}$ "		Nails or screws at 7" spacing at panel edges including top and bottom plates; for all braced wall panel locations for exterior sheathing nail or screw size, see Table R602.3(1); for interior gypsum board nail or screw size, see Table R702.3.5
PBS	Particleboard sheathing (see Section R605)	$\frac{3}{8}$ " or $\frac{1}{2}$ " for maximum 16" stud spacing		$1\frac{1}{2}$ " galvanized roofing nails or 8d common ($2\frac{1}{2}$ " × 0.131) nails at 3" spacing (panel edges) at 6" spacing (intermediate supports)
PCP	Portland cement plaster	See Section R703.6 For maximum 16" stud spacing		$1\frac{1}{2}$ ", 11 gage, $\frac{7}{16}$ " head nails at 6" spacing or $\frac{7}{8}$ ", 16 gage staples at 6" spacing
HPS	Hardboard panel siding	$\frac{7}{16}$ " For maximum 16" stud spacing		0.092" dia., 0.225" head nails with length to accommodate $1\frac{1}{2}$ " penetration into studs at 4" spacing (panel edges), at 8" spacing (intermediate supports)
ABW	Alternate braced wall	See Section R602.10.3.2		See Section R602.10.3.2
PFH	Intermittent portal frame	See Section R602.10.3.3		See Section R602.10.3.3
PFG	Intermittent portal frame at garage	See Section R602.10.3.4		See Section R602.10.3.4

WALL CONSTRUCTION

TABLE R602.10.3
EFFECTIVE LENGTHS FOR BRACED WALL PANELS LESS THAN 48 INCHES IN ACTUAL LENGTH
(BRACE METHODS DWB, WSP, SFB, PBS, PCP AND HPS^a)

ACTUAL LENGTH OF BRACED WALL PANEL (inches)	EFFECTIVE LENGTH OF BRACED WALL PANEL (inches)		
	8-foot Wall Height	9-foot Wall Height	10-foot Wall Height
48	48	48	48
42	36	36	N/A
36	27	N/A	N/A

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Interpolation shall be permitted.

TABLE R602.10.3.1
MINIMUM LENGTH REQUIREMENTS FOR BRACED WALL PANELS

SEISMIC DESIGN CATEGORY AND WIND SPEED	BRACING METHOD	HEIGHT OF BRACED WALL PANEL				
		8 ft	9 ft	10 ft	11 ft	12 ft
SDC A, B, C, D ₀ , D ₁ and D ₂ Wind speed < 110 mph	DWB, WSP, SFB, PBS, PCP, HPS and Method GB when double sided	4' - 0"	4' - 0"	4' - 0"	4' - 5"	4' - 10"
	Method GB, single sided	8' - 0"	8' - 0"	8' - 0"	8' - 10"	9' - 8"

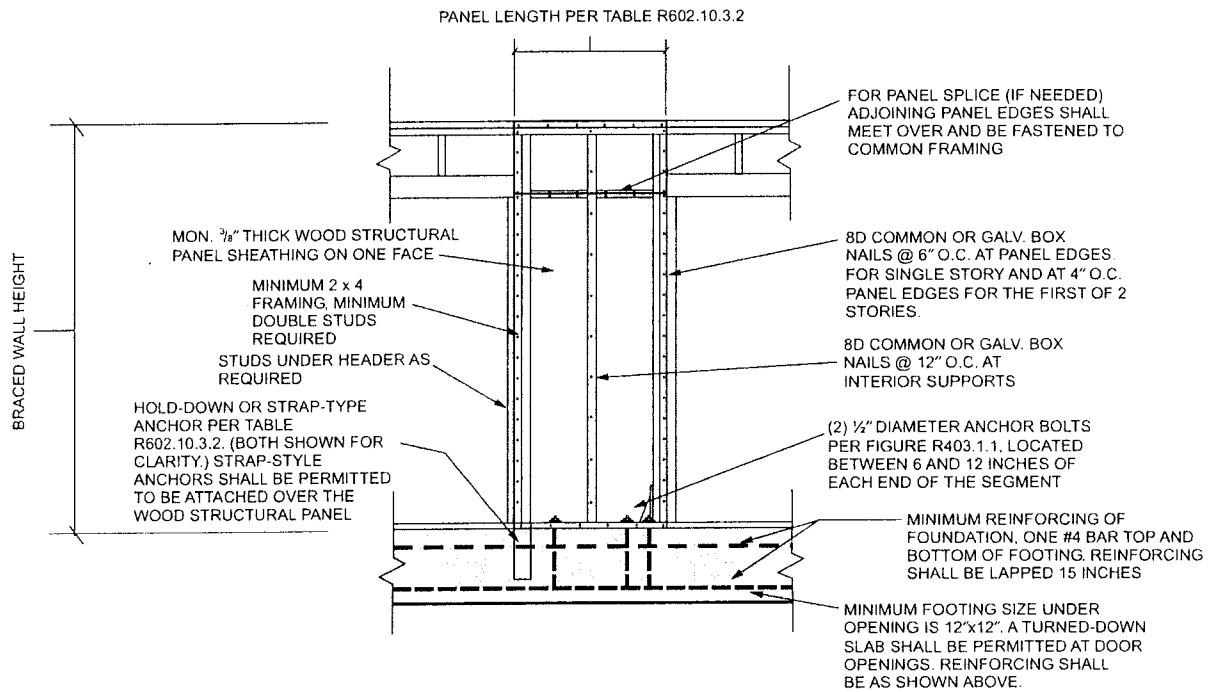
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

TABLE R602.10.3.2
MINIMUM LENGTH REQUIREMENTS AND HOLD-DOWN FORCES FOR METHOD ABW BRACED WALL PANELS

SEISMIC DESIGN CATEGORY AND WIND SPEED		HEIGHT OF BRACED WALL PANEL				
		8 ft	9 ft	10 ft	11 ft	12 ft
SDC A, B and C Wind speed < 110 mph	Minimum sheathed length	2' - 4"	2' - 8"	2' - 10"	3' - 2"	3' - 6"
	R602.10.3.2, item 1 hold-down force (lb)	1800	1800	1800	2000	2200
	R602.10.3.2, item 2 hold-down force (lb)	3000	3000	3000	3300	3600
SDC D ₀ , D ₁ and D ₂ Wind speed < 110 mph	Minimum sheathed length	2' - 8"	2' - 8"	2' - 10"	NP ^a	NP ^a
	R602.10.3.2, item 1 hold-down force (lb)	1800	1800	1800	NP ^a	NP ^a
	R602.10.3.2, item 2 hold-down force (lb)	3000	3000	3000	NP ^a	NP ^a

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound = 4.448 N.

a. NP = Not Permitted. Maximum height of 10 feet.



For SI: 1 inch = 25.4 mm.

FIGURE R602.10.3.2
ALTERNATE BRACED WALL PANEL

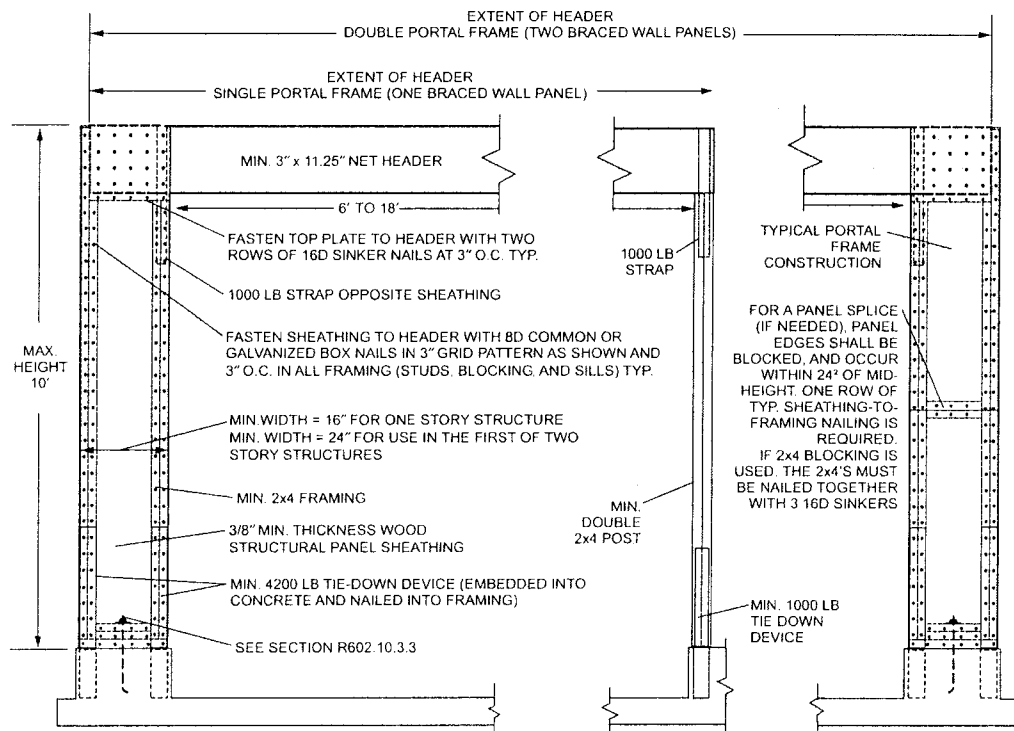
R602.10.3.3 Method PFH: Portal frame with hold-downs. Method PFH *braced wall panels* constructed in accordance with one of the following provisions are also permitted to replace each 4 feet (1219 mm) of *braced wall panel* as required by Section R602.10.3 for use adjacent to a window or door opening with a full-length header:

1. Each panel shall be fabricated in accordance with Figure R602.10.3.3. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed in accordance with Figure R602.10.3.3. A spacer, if used with a built-up header, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header shall extend between the inside faces of the first full-length outer studs of each panel. One anchor bolt not less than $\frac{5}{8}$ -inch-diameter (16 mm) and installed in accordance with Section R403.1.6 shall be provided in the center of each sill plate. The hold-down devices shall be an embedded-strap type, installed in accordance with the manufacturer's recommendations. The panels shall be supported directly on a foundation which is continuous across the entire length of the braced wall line. The foundation shall be reinforced as shown on Figure R602.10.3.2. This reinforcement shall be lapped not less than 15 inches (381 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.
2. In the first *story* of two-story buildings, each wall panel shall be braced in accordance with item 1

above, except that each panel shall have a length of not less than 24 inches (610 mm).

R602.10.3.4 Method PFG: at garage door openings in Seismic Design Categories A, B and C. Where supporting a roof or one *story* and a roof, alternate *braced wall panels* constructed in accordance with the following provisions are permitted on either side of garage door openings. For the purpose of calculating wall bracing amounts to satisfy the minimum requirements of Table R602.10.1.2(1), the length of the alternate *braced wall panel* shall be multiplied by a factor of 1.5.

1. *Braced wall panel* length shall be a minimum of 24 inches (610 mm) and *braced wall panel* height shall be a maximum of 10 feet (3048 mm).
2. *Braced wall panel* shall be sheathed on one face with a single layer of $\frac{7}{16}$ -inch-minimum (11 mm) thickness wood structural panel sheathing attached to framing with 8d common nails at 3 inches (76 mm) on center in accordance with Figure R602.10.3.4.
3. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed to the header at 3 inches (76 mm) on center grid in accordance with Figure R602.10.3.4.
4. The header shall consist of a minimum of two solid sawn 2x12s (51 by 305 mm) or a 3 inches x 11.25 inch (76 by 286 mm) glued-laminated header. The header shall extend between the inside faces of the first full-length outer studs of each panel in accordance with Figure R602.10.3.4. The clear span of the header between the inner studs of each panel



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.3
METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS

- shall be not less than 6 feet (1829 mm) and not more than 18 feet (5486 mm) in length.
5. A strap with an uplift capacity of not less than 1,000 pounds (4448 N) shall fasten the header to the side of the inner studs opposite the sheathing face. Where building is located in Wind Exposure Categories C or D, the strap uplift capacity shall be in accordance with Table R602.10.4.1.1.
 6. A minimum of two bolts not less than $\frac{1}{2}$ -inch (12.7 mm) diameter shall be installed in accordance with Section R403.1.6. A $\frac{3}{16}$ -inch by $2\frac{1}{2}$ -inch (4.8 by 63 mm) by $2\frac{1}{2}$ -inch steel plate washer is installed between the bottom plate and the nut of each bolt.
 7. *Braced wall panel* shall be installed directly on a foundation.
 8. Where an alternate *braced wall panel* is located only on one side of the garage opening, the header shall be connected to a supporting jack stud on the opposite side of the garage opening with a metal strap with an uplift capacity of not less than 1,000 pounds. Where that supporting jack stud is not part of a *braced wall panel* assembly, another 1,000 pounds (4448 N) strap shall be installed to attach the supporting jack stud to the foundation.

R602.10.4 Continuous sheathing. *Braced wall lines* with continuous sheathing shall be constructed in accordance with this section. All *braced wall lines* along exterior walls on the same *story* shall be continuously sheathed.

Exception: Within Seismic Design Categories A, B and C or in regions where the basic wind speed is less than or equal to 100 mph (45 m/s), other bracing methods prescribed by this code shall be permitted on other *braced wall lines* on the same *story* level or on any *braced wall line* on different *story* levels of the building.

R602.10.4.1 Continuous sheathing braced wall panels. Continuous sheathing methods require structural panel sheathing to be used on all sheathable surfaces on one side of a *braced wall line* including areas above and below openings and gable end walls. *Braced wall panels* shall be constructed in accordance with one of the methods listed in Table R602.10.4.1. Different bracing methods, other than those listed in Table R602.10.4.1, shall not be permitted along a *braced wall line* with continuous sheathing.

R602.10.4.1.1 Continuous portal frame. Continuous portal frame *braced wall panels* shall be constructed in accordance with Figure R602.10.4.1.1. The number of continuous portal frame panels in a single *braced wall line* shall not exceed four. For purposes of resisting wind pressures acting perpendicular to the wall, the requirements of Figure R602.10.4.1.1 and Table R602.10.4.1.1 shall be met. There shall be a maximum of two braced wall segments per header and header length shall not exceed 22 feet (6706 mm). Tension straps shall be installed in accordance with the manufacturer's recommendations.

SECTION R327.2 DEFINITIONS

For the purposes of this chapter, certain terms are defined below:

CDF DIRECTOR means the Director of the California Department of Forestry and Fire Protection.

EXTERIOR COVERING. The exposed siding or cladding material applied to the exterior side of an exterior wall, roof eave soffit, floor projection or exposed underfloor framing.

FIRE PROTECTION PLAN is a document prepared for a specific project or development proposed for a Wildland-Urban Interface Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure. The Fire Protection Plan shall be in accordance with this chapter and the California Fire Code, Chapter 49. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted. Only locally adopted ordinances that have been filed with the California Building Standards Commission or the Department of Housing and Community Development in accordance with Section 1.1.8 shall apply.

FIRE HAZARD SEVERITY ZONES are geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very-High, High or Moderate in State Responsibility Areas or as Local Agency Very-High Fire Hazard Severity Zones designated pursuant to California Government Code Sections 51175 through 51189. See California Fire Code Article 86.

The California Code of Regulations, Title 14, Section 1280 entitles the maps of these geographical areas as "Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California."

HEAVY TIMBER. A type of construction classification specified in Section 602 of the California Building Code. For use in this chapter, heavy timber shall be sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches (102 mm). Heavy timber walls or floors shall be sawn or glue-laminated planks splined, tongue-and-groove, or set close together and well spiked.

IGNITION-RESISTANT MATERIAL A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames, as prescribed in Section R327.3 and SFM Standard 12-7A-5, Ignition-Resistant Material.

LOCAL AGENCY VERY-HIGH FIRE HAZARD SEVERITY ZONE means an area designated by a local agency upon the recommendation of the CDF Director pursuant to Government Code Sections 51177(c), 51178 and 5118 that is not a state responsibility area and where a local agency, city, county, city and county, or district is responsible for fire protection.

LOG WALL CONSTRUCTION. A type of construction in which exterior walls are constructed of solid wood members and where the smallest horizontal dimension of each solid wood member is at least 6 inches (152 mm).

RAFTER TAIL. The portion of roof rafter framing in a sloping roof assembly that projects beyond and overhangs an exterior wall.

ROOF EAVE. The lower portion of a sloping roof assembly that projects beyond and overhangs an exterior wall at the lower end of the rafter tails. Roof eaves may be either "open" or "enclosed." Open roof eaves have exposed rafter tails and an unenclosed space on the underside of the roof deck. Enclosed roof eaves have a boxed-in roof eave soffit with a horizontal underside or sloping rafter tails with an exterior covering applied to the underside of the rafter tails.

ROOF EAVE SOFFIT. An enclosed boxed-in soffit under a roof eave with exterior covering material applied to the soffit framing creating a horizontal surface on the exposed underside.

STATE RESPONSIBILITY AREA means lands that are classified by the Board of Forestry pursuant to Public Resources Code Section 4125 where the financial responsibility of preventing and suppressing forest fires is primarily the responsibility of the state.

WILDFIRE is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property or resources as defined in Public Resources Code Sections 4103 and 4104.

WILDFIRE EXPOSURE is one or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.

WILDLAND-URBAN INTERFACE FIRE AREA is a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

SECTION R327.3 STANDARDS OF QUALITY

R327.3.1 General. Building material, systems, assemblies and methods of construction used in this chapter shall be in accordance with Section R327.3.

R327.3.2 Qualification by testing. Material and material assemblies tested in accordance with the requirements of Section R327.3 shall be accepted for use when the results and conditions of those tests are met. Product evaluation testing of material and material assemblies shall be approved or listed by the State Fire Marshal, or identified in a current report issued by an approved agency.

R327.3.3 Approved agency. Product evaluation testing shall be performed by an approved agency as defined in Section 1702 of the California Building Code. The scope of accreditation for the approved agency shall include building product compliance with code.

R327.3.4 Labeling. Material and material assemblies tested in accordance with the requirements of section R327.3 shall bear an identification label showing the fire test results. That identification label shall be issued by a

testing and/or inspecting agency approved by the State Fire Marshal.

1. Identification mark of the approved testing and/or inspecting agency
2. Contact and identification information of the manufacturer
3. Model number or identification of the product or material
4. Pre-test weathering specified in this chapter
5. Compliance standard as described under Section R327.3.7

R327.3.5 Weathering and surface treatment protection.

R327.3.5.1 General. Material and material assemblies tested in accordance with the requirements of Section R327.3 shall maintain their fire test performance under conditions of use when installed in accordance with the manufacturers instructions.

R327.3.5.2 Weathering. Fire-retardant-treated wood and fire-retardant-treated wood shingles and shakes shall meet the fire test performance requirements of this chapter after being subjected to the weathering conditions contained in the following standards, as applicable to the materials and the conditions of use.

R327.3.5.2.1 Fire-retardant-treated wood. Fire-retardant-treated wood shall be tested in accordance with ASTM D 2898, "Standard Practice for Accelerated Weathering of Fire-Retardant Treated Wood for Fire Testing (Method A)" and the requirements of Section 2303.2 of the California Building Code.

R327.3.5.2.2 Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes shall be approved and listed by the State Fire Marshal in accordance with Section 208(c), Title 19 California Code of Regulations.

R327.3.5.3 Surface treatment protection. The use of paints, coatings, stains or other surface treatments are not an approved method of protection as required in this section.

R327.3.6 Alternates for materials, design, tests and methods of construction. The enforcing agency is permitted to modify the provisions of this chapter for site-specific conditions in accordance with Section 1.11.2.4. When required by the enforcing agency for the purposes of granting modifications, a fire protection plan shall be submitted in accordance with the California Fire Code, Chapter 49.

R327.3.7 Standards of quality. The State Fire Marshal standards for exterior wildfire exposure protection listed below and as referenced in this chapter are located in the California Referenced Standards Code, Part 12 and Chapter 44 of this code.

SFM Standard 12-7A-1, Exterior Wall Siding and Sheathing. A fire resistance test standard consisting of a

150 kW intensity direct flame exposure for a 10 minutes duration.

SFM Standard 12-7A-2, Exterior Windows. A fire resistance test standard consisting of a 150 kW intensity direct flame exposure for a 8 minutes duration.

SFM Standard 12-7A-3, Horizontal Projection Under-side. A fire resistance test standard consisting of a 300 kW intensity direct flame exposure for a 10 minute duration.

SFM Standard 12-7A-4, Decking. A two-part test consisting of a heat release rate (Part A) deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3 minute duration, and a (Part B) sustained deck assembly combustion test consisting of a deck upper surface burning ember exposure with a 12 mph wind for 40 minutes using a 2.2lb (1kg) burning "Class A" size 12 inch x 12 inch x 2.25inch (300 mm x 300 mm x 57mm) roof test brand.

SFM Standard 12-7A-4A, Decking Alternate Method A. A heat release rate deck assembly combustion test with an under deck exposure of 80 kW intensity direct flame for a 3 minute duration,

SFM Standard 12-7A-5, Ignition-resistant Material. A generic building material surface burning flame spread test standard consisting of an extended 30 minute ASTM E 84 or UL 723 test method as is used for Fire-Retardant-Treated wood.

SECTION R327.4 IGNITION RESISTANT CONSTRUCTION

R327.4.1 General. The materials prescribed herein for ignition resistance shall conform to the requirements of this chapter:

R327.4.2 Ignition-resistant material. Ignition-resistant material shall be determined in accordance with the test procedures set forth in SFM Standard 12-7A-5 "Ignition-Resistant Material" or in accordance with this section.

R327.4.3 Alternative methods for determining ignition-resistant material. Any one of the following shall be accepted as meeting the definition of ignition-resistant material:

1. Noncombustible material. Material that complies with the definition for noncombustible materials in Section R202.
2. Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use that complies with the requirements of Section 2303.2 of the California Building Code.
3. Fire-retardant-treated wood shingles and shakes. Fire-retardant-treated wood shingles and shakes, as defined in Section 1505.6 of the California Building Code and listed by State Fire Marshal for use as "Class B" roof covering, shall be accepted as an igni-

tion-resistant wall covering material when installed over solid sheathing.

SECTION R327.5 ROOFING

R327.5.1 General. Roofs shall comply with the requirements of Sections R327 and R902. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

R327.5.2 Roof coverings. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be firestopped with approved materials or have one layer of minimum 72 pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909 installed over the combustible decking.

R327.5.3 Roof valleys. Where valley flashing is installed, the flashing shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D 3909, at least 36-inch-wide (914 mm) running the full length of the valley.

R327.5.4 Roof gutters. Roof gutters shall be provided with the means to prevent the accumulation of leaves and debris in the gutter.

SECTION R327.6 VENTS

R327.6.1 General. Where provided, ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with Section 1203 of the California Building Code and Sections R327.6.1 through R327.6.3 of this section to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.

R327.6.2 Requirements. Ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet the following requirements:

1. The dimensions of the openings therein shall be a minimum of $\frac{1}{16}$ th inch (1.6 mm) and shall not exceed $\frac{1}{8}$ th inch (3.2mm).
2. The materials used shall be noncombustible.
Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.
3. The materials used shall be corrosion resistant.

R327.6.3 Ventilation openings on the underside of eaves and cornices: Vents shall not be installed on the underside of eaves and cornices.

Exceptions:

1. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.
2. Vents complying with the requirements of Section R327.6.2 may be installed on the underside of eaves and cornices in accordance with either one of the following conditions:
 - 2.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the California Building Code or,
 - 2.2. The exterior wall covering and exposed underside of the eave are of noncombustible material, or ignition-resistant materials as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the vent is located more than 12 feet from the ground or walking surface of a deck, porch, patio, or similar surface.

SFM-SECTION R327.7 EXTERIOR COVERING

R327.7.1 Scope. The provisions of this section shall govern the materials and construction methods used to resist building ignition and/or safeguard against the intrusion of flames resulting from small ember and short-term direct flame contact exposure.

R327.7.2 General. The following exterior covering materials and/or assemblies shall comply with this section:

1. Exterior wall covering material
2. Exterior wall assembly
3. Exterior exposed underside of roof eave overhangs
4. Exterior exposed underside of roof eave soffits
5. Exposed underside of exterior porch ceilings
6. Exterior exposed underside of floor projections
7. Exterior underfloor areas

Exceptions:

1. Exterior wall architectural trim, embellishments, fascias, and gutters
2. Roof or wall top cornice projections and similar assemblies
3. Roof assembly projections over gable end walls

4. Solid wood rafter tails and solid wood blocking installed between rafters having minimum dimension 2 inch (50.8 mm) nominal
5. Deck walking surfaces shall comply with Section R327.9 only

R327.7.3. Exterior walls. The exterior wall covering or wall assembly shall comply with one of the following requirements:

1. Noncombustible material
2. Ignition-resistant material
3. Heavy-timber exterior wall assembly
4. Log wall construction assembly
5. Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1

Exceptions: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section:

1. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing.
2. The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual.

R327.7.3.1 Extent of exterior wall covering. Exterior wall coverings shall extend from the top of the foundation to the roof, and terminate at 2 inch (50.8 mm) nominal solid wood blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

R327.7.4 Open roof eaves. The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

Exceptions: The following materials do not require protection:

1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm)

2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm)
3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails
4. Fascia and other architectural trim boards

R327.7.5 Enclosed roof eaves and roof eave soffits. The exposed underside of enclosed roof eaves having either a boxed-in roof eave soffit with a horizontal underside, or sloping rafter tails with an exterior covering applied to the underside of the rafter tails, shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exceptions: The following materials do not require protection:

1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails
2. Fascia and other architectural trim boards

R327.7.6 Exterior porch ceilings. The exposed underside of exterior porch ceilings shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind the exterior covering on the underside of the ceiling
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the ceiling assembly including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. Porch ceiling assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exception: Architectural trim boards.

R327.7.7 Floor projections. The exposed underside of a cantilevered floor projection where a floor assembly extends over an exterior wall shall be protected by one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor projection including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. The underside of a floor projection assembly that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exception: Architectural trim boards.

R327.7.8. Underfloor protection. The underfloor area of elevated or overhanging buildings shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual
5. The underside of a floor assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exception: Heavy-timber structural columns and beams do not require protection.

R327.7.9 Underside of appendages. When required by the enforcing agency the underside of overhanging appendages shall be enclosed to grade in accordance with the requirements of this chapter or the underside of the exposed underfloor shall consist of one of the following:

1. Noncombustible material
2. Ignition-resistant material
3. One layer of $\frac{5}{8}$ -inch Type X gypsum sheathing applied behind an exterior covering on the underside of the floor projection
4. The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the floor including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

5. The underside of a floor assembly that meets the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3

Exception: Heavy-timber structural columns and beams do not require protection.

SECTION R327.8 EXTERIOR WINDOWS AND DOORS

R327.8.1 General.

R327.8.2 Exterior glazing. The following exterior glazing materials and/or assemblies shall comply with this section:

1. Exterior windows
2. Exterior glazed doors
3. Glazed openings within exterior doors
4. Glazed openings within exterior garage doors
5. Exterior structural glass veneer

R327.8.2.1 Exterior windows and exterior glazed door assembly requirements. Exterior windows and exterior glazed door assemblies shall comply with one of the following requirements:

1. Be constructed of multipane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or
2. Be constructed of glass block units, or
3. Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
5. Be tested to meet the performance requirements of SFM Standard 12-7A-2.

R327.8.2.2 Structural glass veneer. The wall assembly behind structural glass veneer shall comply with Section R327.7.3.

R327.8.3 Exterior doors. Exterior doors shall comply with one of the following:

1. The exterior surface or cladding shall be of noncombustible or ignition-resistant material, or
2. Shall be constructed of solid core wood that comply with the following requirements:
 - 2.1. Stiles and rails shall not be less than $1\frac{1}{8}$ inches thick
 - 2.2. Raised panels shall not be less than $1\frac{1}{4}$ inches thick, except for the exterior perimeter of the raised panel that may taper to a tongue not less than $\frac{3}{8}$ inch thick.
3. Shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
4. Shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

R327.8.3.1 Exterior door glazing. Glazing in exterior doors shall comply with Section R327.8.2.1.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT
GARAGE OR STORAGE BUILDING FEES INSTALLED ON A MOBILEHOME
LOT
HCD PLANS



THIS FEE SCHEDULE BECOMES EFFECTIVE FEBRUARY 1, 2009

SQ. FOOTAGE PER STRUCTURE	PERMIT FEE	VALUATION	ELECTRIC FEE	TOTAL FEES
121 - 135	196.00	72.00	5.00	201.00
136 - 162	196.00	81.00	5.00	201.00
163 - 190	196.00	90.00	5.00	201.00
191 - 217	196.00	99.00	5.00	201.00
218 - 244	196.00	108.00	5.00	201.00
245 - 271	196.00	117.00	5.00	201.00
272 - 298	196.00	126.00	5.00	201.00
299 - 325	196.00	135.00	5.00	201.00
326 - 352	196.00	144.00	5.00	201.00
353 - 379	196.00	153.00	5.00	201.00
380 - 406	196.00	162.00	5.00	201.00
407 - 433	196.00	171.00	5.00	201.00
434 - 460	196.00	180.00	5.00	201.00
461 - 488	196.00	189.00	5.00	201.00
489 - 515	196.00	198.00	5.00	203.00
516 - 542	196.00	207.00	5.00	212.00
543 - 569	196.00	216.00	5.00	221.00
570 - 596	196.00	225.00	5.00	230.00
597 - 623	196.00	234.00	5.00	239.00
624 - 650	196.00	243.00	5.00	248.00
651 - 677	196.00	252.00	5.00	257.00

Add \$7.00 to this fee schedule to alter the park lot electrical service for power supply. If the MH-Unit is to be altered to gain power, a separate permit (HCD 415) with a \$196.00 fee is required.

(Evaluation fees are based on regulatory provisions identified in the California State Building Code)
 Revised 1/09

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT
GARAGE OR STORAGE BUILDING FEES INSTALLED ON A MOBILEHOME
LOT
NON-HCD PLANS



THIS FEE SCHEDULE BECOMES EFFECTIVE FEBRUARY 1, 2009

SQ. FOOTAGE PER STRUCTURE	PERMIT FEE	VALUATION	ELECTRIC FEE	PLAN CHECK FEE	TOTAL FEES
121 - 135	196.00	72.00	5.00	98.00	299.00
136 - 162	196.00	81.00	5.00	98.00	299.00
163 - 190	196.00	90.00	5.00	98.00	299.00
191 - 217	196.00	99.00	5.00	98.00	299.00
218 - 244	196.00	108.00	5.00	98.00	299.00
245 - 271	196.00	117.00	5.00	98.00	299.00
272 - 298	196.00	126.00	5.00	98.00	299.00
299 - 325	196.00	135.00	5.00	98.00	299.00
326 - 352	196.00	144.00	5.00	98.00	299.00
353 - 379	196.00	153.00	5.00	98.00	299.00
380 - 406	196.00	162.00	5.00	98.00	299.00
407 - 433	196.00	171.00	5.00	98.00	299.00
434 - 460	196.00	180.00	5.00	98.00	299.00
461 - 488	196.00	189.00	5.00	98.00	299.00
489 - 515	196.00	198.00	5.00	101.50	304.50
516 - 542	196.00	207.00	5.00	106.00	313.00
543 - 569	196.00	216.00	5.00	110.50	331.50
570 - 596	196.00	225.00	5.00	115.00	345.00
597 - 623	196.00	234.00	5.00	119.50	358.50
624 - 650	196.00	243.00	5.00	124.00	372.00
651 - 677	196.00	252.00	5.00	128.50	385.50

Add \$7.00 to this fee schedule to alter the park lot electrical service for power supply. If the MH-unit is to be altered to gain power, a separate permit (HCD 415) and a \$196.00 fee is required.

(Evaluation fees are based on regulatory provisions identified in the California State Building Code)

Revised 1/09